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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/581,490

08/10/2006

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00250.000035

3824

5514 7590 07/25/2007
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EXAMINER

DOAK, JENNIFER L.

ART UNIT

PAPER NUMBER

2872

MAIL DATE

DELIVERY MODE

07/25/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/581,490	Applicant(s) MIMURA, IKUO	
	Examiner Jennifer L. Doak	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 7-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>7/31/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election of species I in the reply filed on June 18, 2007 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claims 7-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species II, there being no allowable generic or linking claim.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the lack of intersection of groove x with the intersection of the y and z grooves must be shown or the feature(s) canceled from the claim 6. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet"

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pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Mimura et al. (US 6318866)(hereinafter Mimura).

Regarding Claims 1 and 21, Mimura discloses a retroreflective article comprising plural triangular-pyramidal cube-corner retroreflective element pairs formed of parallel V-shaped groove groups from three directions of x direction, y direction, and z direction (Fig. 7) and set on a common plane decided by base line groups of the parallel V-shaped groove groups (Fig. 8), in which one-side groove angle formed between a cross line between a plane vertical to the common plane and a V-groove vertical plane (Fig. 8), which includes the base line of a V-shaped groove and perpendicular to said the common plane, and a reflective lateral face, and the V-groove vertical plane does not form a constant angle in the reflective lateral face but the lateral face forms a curved and/or multiple surface (Fig. 8; i.e. the multiple surface is due to the differing angle of groove depth and multiple direction cuts as shown in the figures).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

As set forth above, Mimura discloses all the elements of the claims from which the following claims depend and the elements are hereby incorporated into the following according to dependency.

Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mimura. Regarding Claim 2, Mimura does not explicitly disclose the following ranges wherein at least one reflective lateral face for constituting the triangular-pyramidal cube-corner retroreflective element pairs, the one-side groove angle does not form a constant angle with the maximum deviation of 0.0001° to 0.1° from a normal one-side groove angle for forming a cube corner and a reflective lateral face forms a curved and/or multiple surface. However, Mimura does teach the partial exclusion of the excluded range, specifically citing a deviation angle range of $\pm(0.01^{\circ}$ to $0.4^{\circ})$ (col. 15, lns. 10-13), which allows a non-excluded range of $\pm(0.1^{\circ}$ to $0.4^{\circ})$, which exceeds and is outside of the excluded amount. It would have been obvious to one of ordinary skill in the art at the time the invention was made to not include the range 0.0001° to 0.1° , since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art, *In re Aller*, 105 USPQ 233 (C.C.P.A. 1955). One would have been motivated to adjust the deviation angle to improve reflectance.

Regarding Claims 3-5, Mimura additionally discloses that the internal angle of one of bottom-plane triangles formed of three bottom planes constituting the reflective elements ranges between 35° and 75° or ranges between 45° and 70° (Mimura discloses an angle of 58.76° at col. 21, ln. 66 – col. 22, ln. 13); the depth of a plane formed by the base line group of at least one-directional V- shaped groove constituting the reflective elements is different from the depth of other planes (Fig. 8).

Regarding Claim 6, Mimura additionally discloses that an x-directional V-shaped groove constituting the reflective elements does not pass through the intersects of y- and z-directional V-shaped grooves and is formed at a position having an offset (A_x) from a straight line connecting intersects A and B, the triangular-pyramidal cube-corer retroreflective element pairs are asymmetric pairs (Fig. 16).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Minoura et al. (US 20020154408).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer L. Doak whose telephone number is 571-272-9791. The examiner can normally be reached on Mon-Thur: 7:30A-5:00P, Alt Fri: 7:30A-4:00P (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JD


STEPHONE B. ALLEN
SUPERVISORY PATENT EXAMINER